Math Interventions Update

A Monthly Update for the Latest in Math Interventions

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Volume 1 – Issue 6

School-Wide Strategies for Managing Mathematics

Math Vocabulary: Pre-teach, Model, and Use Standard Math Terms (Chard). Three strategies can help students to learn essential math vocabulary: pre-teaching key vocabulary items, modeling those vocabulary words, and using only universally accepted math terms in instruction. (1) Pre-teach key math vocabulary. Math vocabulary provides students with the language tools to grasp abstract mathematical concepts and to explain their own reasoning. Therefore, do not wait to teach that vocabulary only at 'point of use'. Instead, preview relevant math vocabulary as a regular a part of the 'background' information that students receive in preparation to learn new math concepts. (2) Model the relevant vocabulary when new concepts are taught. Strengthen students' grasp of new vocabulary by reviewing a number of math problems with the class, each time consistently and explicitly modeling the use of appropriate vocabulary to describe the concepts. Then have students engage in cooperative learning or individual practice activities in which they too must successfully use the new vocabulary—while the teacher provides targeted support to students as needed. (3) Ensure that students learn standard, widely accepted labels for common math terms and operations and that they use them consistently to describe their math problem-solving efforts.

Math Instruction: Consolidate Student Learning During Lecture Through the Peer-Guided Pause (Hawkins, & Brady, 1994). During large group math lectures, teachers can help students to retain more instructional content by incorporating brief Peer Guided Pause sessions. Students are trained to work in pairs. At one or more appropriate review points in a lecture period, the instructor directs students to pair up to work together for 4 minutes. During each Pause, students are given an activity that contains one or more correctly completed word or number problems illustrating the math concept(s) covered in the lecture. The sheet also contains several additional, similar problems that pairs of students work cooperatively to complete. Student pairs are reminded to monitor their understanding of the lesson concepts; review the correctly math model problem; work cooperatively on the additional problems, and check their answers. The teacher can direct student pairs to write their names on the practice sheets and collect them as a convenient way to monitor student understanding.

Article Excerpt from *Intervention Central*. Read the entire the article at
http://www.interventioncentral.org/academic-interventions/math/school-wide-strategies-managing-mathematics

Department of Education
Office of Next-Generation Learners
Division of Learning Services
Differentiated Learning Branch
Division Director: Johnny Collett
Branch Manager: April Pieper
Mathematics Intervention Consultant: Pamela Pickens

Mathematics Achievement Fund (MAF)

Monthly Update/Focus

2013-2014 Assurance Statement – The Assurance Statement and Budget Forms are now complete. The Assurance document includes a brief background, options for implementation, requirements, roles of the MIT and principal, assessments, reporting, and funding requirements. The last three pages need to be completed and returned to the Kentucky Department of Education. The Assurance Statement will need to be filled out completely and signed by the school's principal, as well as the superintendent. The original assurance statement with signatures and the budget summary form should be mailed back to me by August 1, 2013.

End of Year Requirements – The end of the school year is fast approaching. Please remember that all MITs must submit end-of-year reports for KDE.

Items to Submit by June 1st, 2013:

- **DOR** – Instead of completing an additional report of attendance for KDE, just email your completed DOR to pamela.pickens@education.ky.gov
- **Inventory** - Submit an inventory of items that you currently have that were purchased as a result of the MAF grant. Small items, like post-it notes, pens, etc. do not have to be included. KDE needs an inventory of supplies like resource books, computers, software, etc. Most teachers have to submit an inventory of major items at the end of the year for insurance purposes. A copy of that would be sufficient. You can either scan it to email, fax it, or snail mail the copy. I have also created a simple form, if you want to use it.
- **Survey** – Complete an online survey. The survey is 60 questions long. However, questions 40-60 are the same question about specific assessment tools. Most MITs will only answer one question out of the section. Please make sure you complete the survey online and submit it online.

  The survey link is http://www.surveymonkey.com/s/HPZLG5W

Mathematical Practice of the Month

To emphasize the Mathematical Practices, the CCSS gives them their own distinct section, but they are not to be thought of as a separate skill set to be handled in special lessons or supplements. The intent is that these *essential mathematical habits of mind and action* pervade the curriculum and pedagogy of mathematics, K–12, in age-appropriate ways.

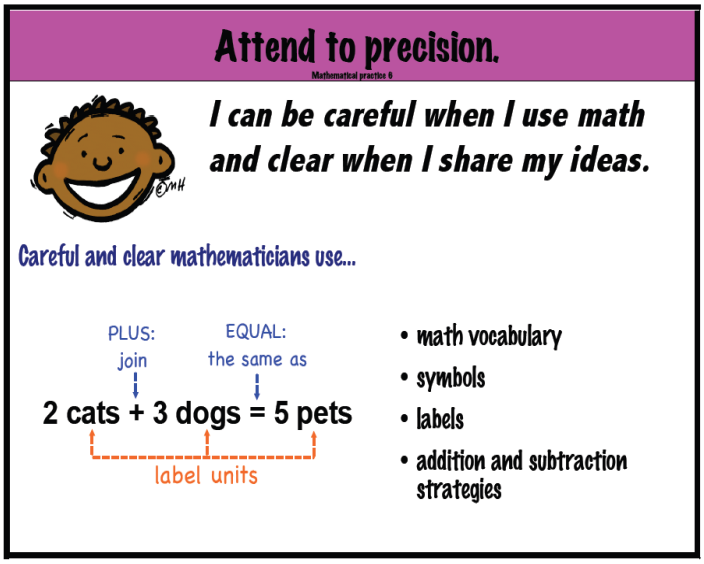
6 – Attend to precision.

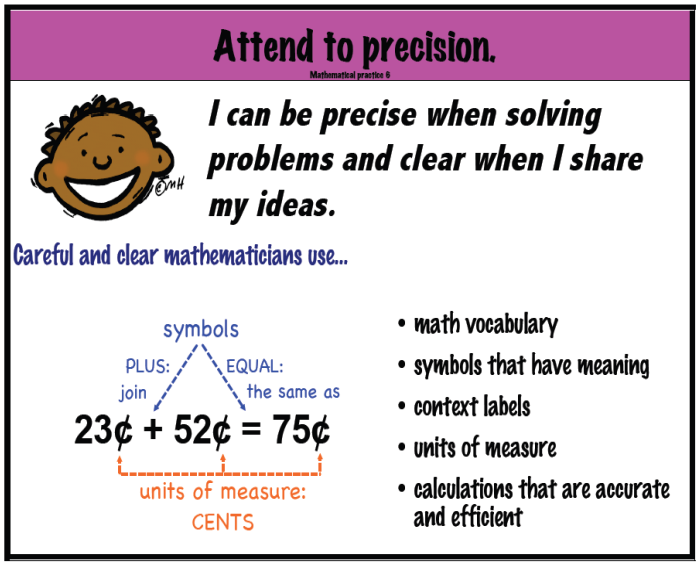
Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions. *Resource: Common Core State Standards Initiative* http://www.corestandards.org

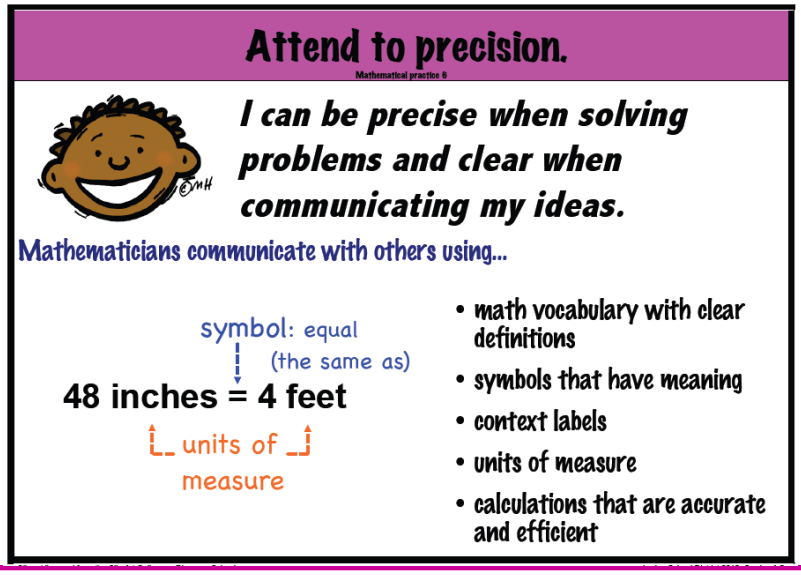
Anchor Charts for this Mathematical Practice

Resource: Jordan School District http://elemmath.jordandistrict.org/files/2012/05/Standard-61.pdf

Left – K-1, Right – 2-3, Bottom – 4-5







What is CIITS?

CIITS stands for the Continuous Instructional Improvement Technology System – a tool designed to pull standards, instructional materials, lesson plans, assessments, data and professional development all together into an integrated online resource. CIITS is a one-stop shop that provides Kentucky educators with the resources aligned to standards that support highly effective teaching and learning in their classrooms, schools and districts.

Featured Link this Month: PD 360°

PD 360° was highlighted in the March 2013 Monthly Newsletter. Last month, formative assessments were the focus of the PD 360° resources. This month please take a moment to check out the following resources about reciprocal (peer-to-peer) teaching:

- Reciprocal Teaching and Cooperative Learning http://www.pd360.com/index.cfm?ContentId=3371
- Stage 4: Process Student Responses http://www.pd360.com/index.cfm?ContentId=483
- Setting Objectives and Providing Feedback http://www.pd360.com/index.cfm?ContentId=123
- Reciprocal Teaching http://www.pd360.com/index.cfm?locType=3&loc=29&thread=6575
- Types of Feedback http://www.pd360.com/index.cfm?locType=5&loc=5585&thread=5470&post=1

PD 360° School Improvement Network

UNBRIDLED LEARNING

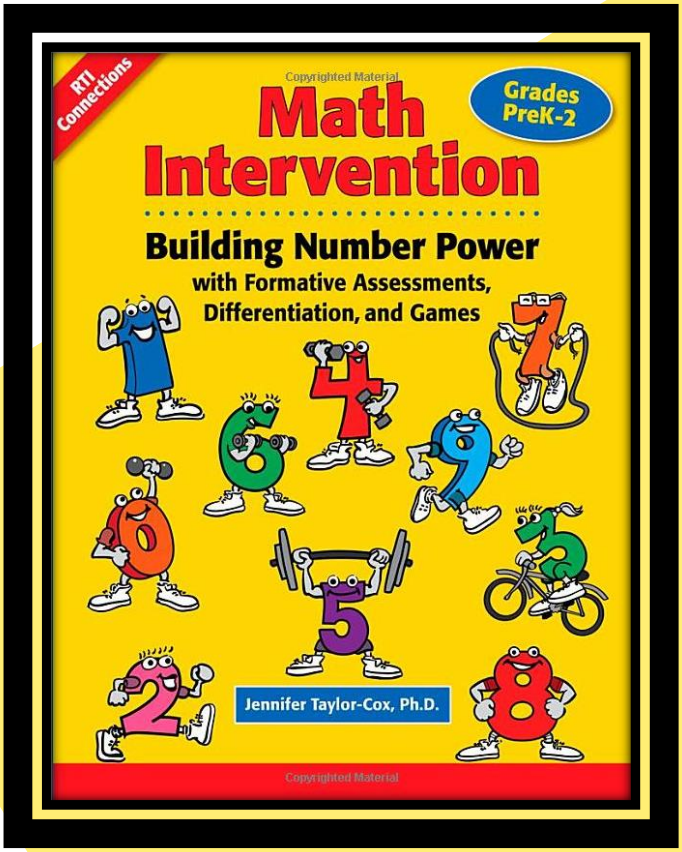
Continuous Instructional Improvement Technology System

Dates to Remember

June 1st – DOR, Inventory, and Survey due to KDE

August 1st – Assurance Statement and Budget Summary due to KDE

November 6th – 8th – NCTM Regional Conference and Exposition, Louisville, Kentucky



Recommended Reading

Math Interventions: Building Number Power with Formative Assessments, Differentiation, and Games

by Jennifer Taylor-Cox (May 14, 2009)

Useful for small groups or one-on-one instruction, this book offers math interventions and RTI connections. Teachers will learn to target math instruction to struggling students by: diagnosing weaknesses, providing specific, differentiated instruction, using formative assessments, offering corrective feedback, and motivating students by using games. The author emphasizes four main goals for math instructors. They must help students achieve: accuracy, efficiency, flexibility, and fluency in solving math problems. Integral to each of these goals is ensuring that students understand math concepts. Taylor-Cox writes, "When concepts are ignored and the focus is solely on rules and procedures, struggling students often develop misconceptions and learning gaps."

Wonderful Websites

Great websites for students to access over the summer!

- ***Cool Math 4 Kids*** – This website has cool math lessons, math games, and fun activities for elementary students. http://www.coolmath4kids.com

- ***Funbrain Math*** – Funbrain has a variety of arcade games that kids love to play, all while quizzing them on their math skills. http://www.funbrain.com/brain/MathBrain/MathBrain.html

- ***Math Playground*** – Action packed math site for elementary and middle school students featuring games, math word problems, math worksheets, logic puzzles, and much more. http://www.mathplayground.com